



Digital Mammography Monitors

# RadiForce® Mammo-Series



extracting the essence.



# Film to Filmless Mammography Diagnosis

As the incidence of breast cancer rises, regular mammograms are recommended for early detection.

It is vital in the process of early breast cancer detection to find subtle masses and calcifications. Film imaging for mammography diagnosis has long been the primary methodology.

However, to meet the demand for a higher quality of images and reduction of reading time and cost, digitizing and networking of medical images in a filmless environment is spreading rapidly.

The transition from film to filmless mammography naturally requires a monitor to display extremely precise images equal to or better than film mammography.

In the mammography field today high-performance monitors featuring high resolutions and displaying high density images contribute to the process of early breast cancer detection.



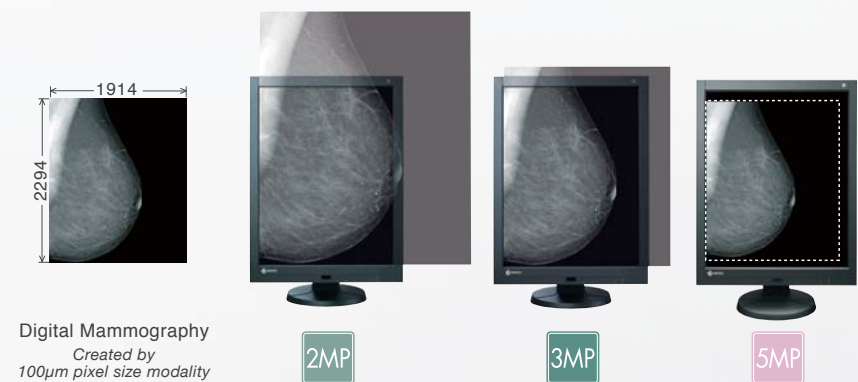
extracting the essence.



# Selecting the Optimum Digital Mammography Monitor

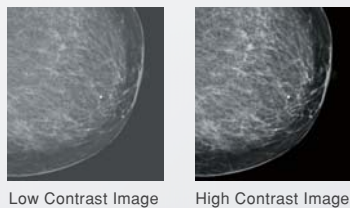
## High-Resolution to Suit Mammographic Image

“Information volume” of a digital mammography image should exceed 5 million pixels. When a lower resolution monitor displays this information volume, the image is either displayed partially at 1:1 pixel mapping or narrowed when displayed to fit the monitor resulting the loss in image quality and mosaic to appear. Therefore, monitor with high resolution of more than 5 megapixels are required to display the correct information volume of a digital mammography image.



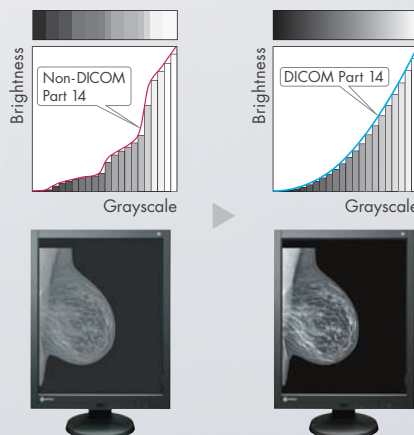
## High Contrast Ratio for Deep Black

For detection of subtle masses and calcifications, the monitor needs performance to accurately render the finer details. The high contrast ratio and higher levels of black performance brings out the subtle differences in similar shades of gray and sharper rendering of details when displaying monochrome images.



## Quality Control for Stable Image

Monitor quality change slowly over time. Therefore, monitor quality control (QC) to detect the changes and to perform calibration compliant with DICOM Part 14 becomes essential to offer reliable long-term use with maintained high definition.





RadiForce Mammo-Series  
Digital Mammography Monitors

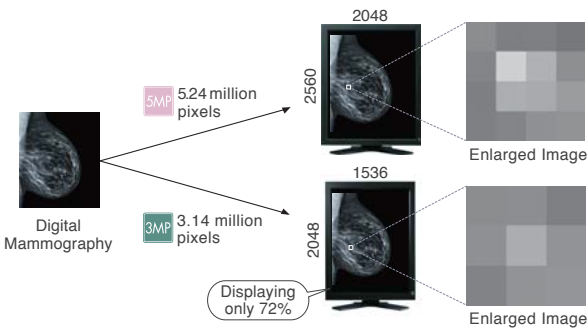
It is vital in the process of early breast cancer detection that monitors display accurate and consistent quality images. EIZO provides optimum diagnosis confidence with distinctive versions of the RadiForce 10 megapixel and 5 megapixel monitors for digital mammography imaging.



Features

High-Resolution

With a resolution of 5 megapixels or higher, the monitors meet the high level standards required for displaying digital mammography.



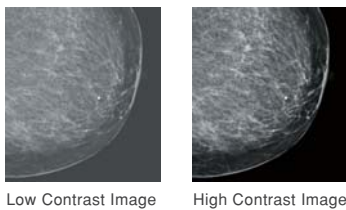
DICOM Part 14 Factory Adjustment

To ensure the most accurate and consistent shadings possible, EIZO carefully measures and sets every grayscale tone on the production line to produce a monitor compliant with DICOM Part 14.



Image Sharpness with High Contrast Ratio

The high contrast ratio brings out the subtle differences in similar shades of gray and sharper rendering of details when displaying monochrome images such as the digital mammography, MRI, and ultrasound images.



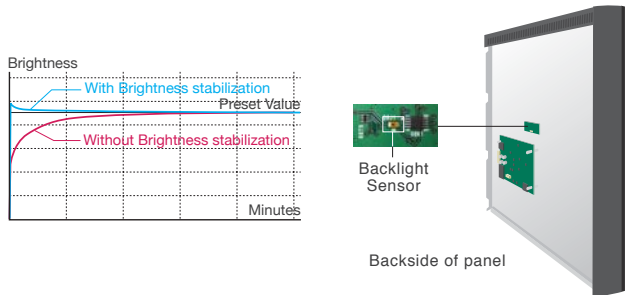
DUE Brightness Uniformity

The Digital Uniformity Equalizer (DUE) function provides optimum backlight luminance uniformity which is considered difficult to attain due to the characteristics of LCD monitors.



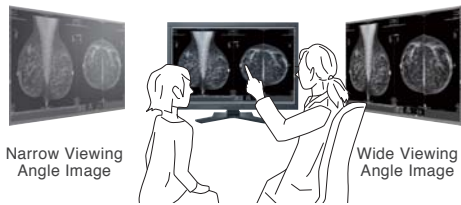
Quick Brightness Stabilization for Instant Viewing

At startup or upon wakeup, the EIZO patented drift correction function quickly stabilizes the brightness level. In addition, a sensor measures the backlight brightness and compensates for brightness fluctuations caused by the ambient temperature and the passage of time.



Wide Viewing Angles for Multiple People Use

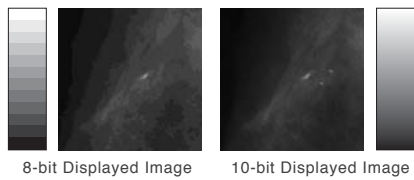
Wide Viewing angles with minimal color shift when viewed from the side.



10-Bit Simultaneous Grayscale Display

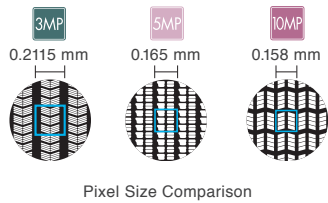
10-bit (1,024 tones) simultaneous grayscale display extends grayscale fidelity to the boundaries of human visual perception abilities and helps radiologists discern the finest nuances within an image.

*10-bit graphics board and 10-bit viewer software needed for 10-bit display.*



Finest Details with Mono-Pixel Design

Thanks to its unique Mono-Pixel design and a pixel pitch size of just 0.158 mm, the RadiForce GX1030 offers exceptionally high brightness levels and a wide aperture ratio to bring out the finest details with a smooth, clear representation.





**GX1030**  
76 cm (30") LCD Monitor



**GX530**  
54 cm (21.3") LCD Monitor



**GX540**  
54 cm (21.3") LCD Monitor



## Features

### LED Environmentally-Friendly LED Backlight

By utilizing an energy-efficient LED as a backlight, the monitor achieves a high-brightness and low power consumption at the same time. Unlike conventional CCFL backlights, LED backlights deteriorate more slowly and thus the monitor offers a longer service life. Since the LED backlight is mercury free, it will reduce any potential impact on the environment when it is disposed of.



LED meets EIZO medical monitors  
**RadiForce LED**



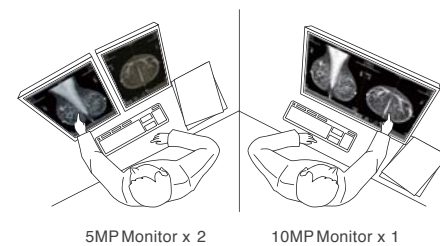
### Two Monitors in One

With its super-high-resolution widescreen, the RadiForce GX1030 is an optimal replacement for traditional dual head 5 megapixel monitor installations. It is ideally suited for displaying digital mammography or other large and finely detailed DICOM images.



### Bezel-Less Configuration for Enhanced Operability

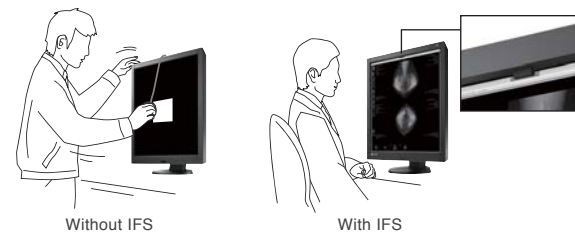
The consistent color point and bezel-less configuration of a single monitor serve to reduce eye fatigue for the radiologist while lowering the administrative and QA costs for the operator. With the unobstructed viewing space, applications can offer greater hanging protocol flexibility for richer comparisons between past and present images.



### Easy Calibration with Integrated Front Sensor

An Integrated Front Sensor (IFS) housed within the front bezel measures brightness and grayscale tones and calibrates to the DICOM Part 14 standard. Without having to connect and disconnect, an IFS performs QC tasks and does not interfere with the viewing area.

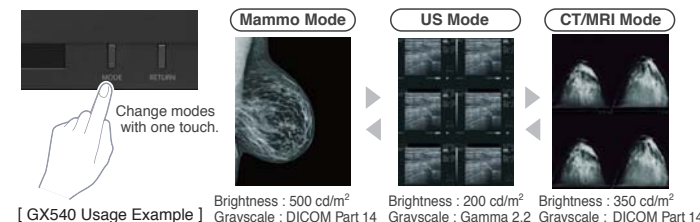
*IFS of GX1030 does not support calibration.*



### Mode Selection for Optimum Viewing

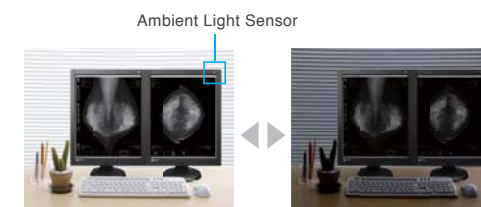
Selectable with the front panel buttons, the CAL Switch function allows for various imaging modes of different modalities such as digital mammography, ultrasound, and MRI images.

*Number or type of the modes vary by model.*



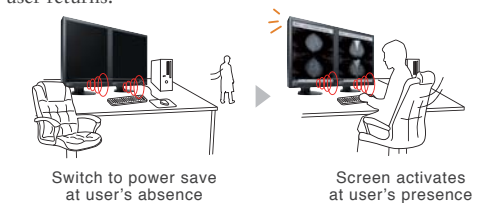
### Optimized Brightness and Grayscale Tone with Ambient Light Tracking

To ensure DICOM conformance in changing room light conditions, Ambient Light Tracking (ALT) function with embedded ambient light sensor keeps checking the room light conditions and automatically optimizes the monitor's brightness and grayscale tone to DICOM Part 14.



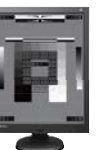
### Presence Sensor for Power Savings

The presence sensor feature unites convenience with savings by ensuring that the monitor conserves power when it is not in use. The presence sensor prompts the monitor to switch to power save mode when it detects the user is away from the monitor, and then resume normal operation when the user returns.



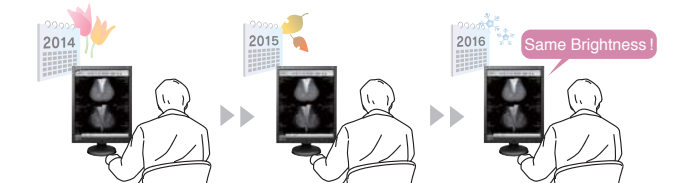
### Internal Test Pattern Generator for Expanded Image Quality

The internal Test Pattern generator can be used to visually inspect image quality without attaching external hardware or installing QC software on the mammography workstation. This can be useful during the initial installation or on systems that prohibit users from installing software packages.



### Brightness Stability Within Usage Time Guaranteed

EIZO's confidence in its product quality extends to brightness stability which is also covered during the usage time specified in the warranty.



### Customer Assurance with Medical Standards

Meets the strictest medical, safety and EMC emissions standards.

### Warranty with Safety and Trust

EIZO and its authorized distributors offer a five-year limited warranty.







# Quality Control of Digital Mammography Monitor

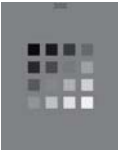
## Quality Control Standards of Digital Mammography Monitor

As with the use of film mammography, image quality testing of the monitor at installation and regularly during use should be carried out. This ensures that the monitor maintains a consistent display of quality digital mammography.



### ■ ACR “Practice Guideline for Determinants of Image Quality in Digital Mammography”

This guideline was formulated collaboratively by specialists in mammography and medical physics who represent the American College of Radiology (ACR), the American Association of Physicists in Medicine (AAPM), and the Society for Imaging Informatics in Medicine



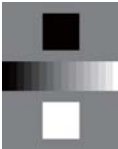
### ■ EUREF “European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis Fourth Edition”

This guideline was issued by the European Commission in cooperation with EUREF (European Reference Organisation for Quality Assured Breast Screening and Diagnostic Services), EBCN (European Breast Cancer Network), and EUSOMA (European Society of Mastology).





### ■ PAS 1054

“Requirements and Testing of Digital Mammographic X-ray Equipment” formulated by the German Institute for Standardization (DIN) in cooperation with the German Radiology Society (DRG) and others. This standard defines the details of the quality assurance obliged by the X-ray Ordinance as well as the QS-RL for general X-ray systems and DIN V 6868-57 for image display devices.



## Graphics Boards

	Xenia Pro	MED-V5800
		
Bus Interface	PCI-Express x16	PCI-Express x16
Compatible OS	Windows 7 / Vista / XP	Windows 7 / Vista / XP
Frame Buffer Memory	1 GB	1 GB
Display Grayscale Tones	10-bit , 8-bit	10-bit , 8-bit
Output Terminal	DVI-I x 3	DVI-I x 1, DisplayPort x 2
Maximum Power Consumption	36.3 W	74 W
Slot(s)	1	1
Chassis	Standard	Standard
Dimensions (W x H)	167.6 x 111.1 mm	228.6 x 111.1 mm

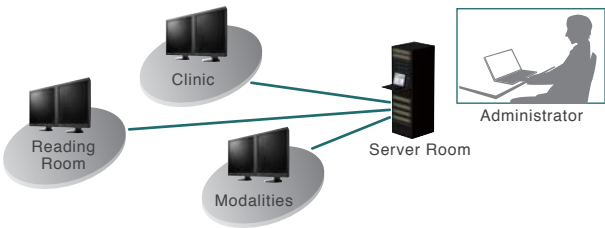
## Monitor Quality Control Solutions

With filmless imaging spreading in the medical world, there is a growing interest in maintaining the quality of monitors displaying medical images. With the know-how and experience as a specialist in monitor manufacturing, we offer state-of-the-art solutions for the quality control of monitors which will lead to the improvement of the quality of medical care itself.






## Centralized Management of All Monitors

RadiNET Pro (sold separately) enables centralized management of calibration tasks, history data of multiple RadiCS clients via a network, and remote QC functions.



## Accessories

Dual Height Adjustable Stand	Panel Protector
	
Mount two panels in either portrait or landscape orientation. <i>Compatible with GX540 and GX530.</i>	Protect against scratches and dust with high light transmission panel.
Monitor Cleaning Kit	
	Keep your screen free from dust and fingerprints with this screen cleaner kit. Includes pump spray and cloth.

## Specifications



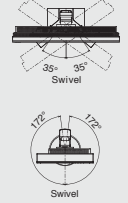
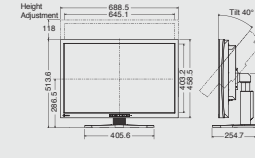
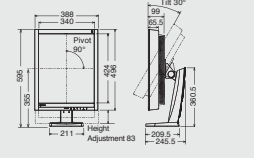
10MP RadiForce GX1030



5MP RadiForce GX540



5MP RadiForce GX530

Model Variations		GX1030-CL: Clear Base GX1030-BL: Blue Base	GX540-CL: Clear Base GX540-CL-P: Pairing	GX530-CL: Clear Base GX530-CL-P: Pairing GX530-BL: Blue Base GX530-BL-P: Pairing
Cabinet Color		Black	Black	Black
Panel	Type	TFT Monochrome LCD Panel (IPS)	TFT Monochrome LCD Panel (IPS)	TFT Monochrome LCD Panel (IPS)
	Backlight	CCFL	LED	CCFL
	Size	76 cm / 30" (763 mm diagonal)	54 cm / 21.3" (540 mm diagonal)	54 cm / 21.3" (540 mm diagonal)
	Native Resolution	4096 x 2560	2048 x 2560	2048 x 2560
	Display Size (H x V)	645.1 x 403.2 mm	337.9 x 422.4 mm	337.9 x 422.4 mm
	Pixel Pitch	0.158 x 0.158 mm	0.165 x 0.165 mm	0.165 x 0.165 mm
	Grayscale Tones	1,024 from a palette of 4,096 tones	10-bit (DisplayPort): 1,024 from a palette of 16,369 tones 8-bit: 256 from a palette of 16,369 tones	10-bit (DisplayPort): 1,024 from a palette of 16,369 tones 8-bit: 256 from a palette of 16,369 tones
	Viewing Angles (H / V, typical)	170°, 170°	176°, 176°	170°, 170°
	Brightness (typical)	1,250 cd/m <sup>2</sup>	1,200 cd/m <sup>2</sup>	1,200 cd/m <sup>2</sup>
	Recommended Brightness for Calibration	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>
Video Signals	Input Terminals	DVI-D x 2 (two inputs are required)	DVI-D (dual link) x 1, DisplayPort x 1	DVI-D (dual link) x 1, DisplayPort x 1
	Digital Scanning Frequency (H / V)	31 - 135 kHz, 19 - 51 Hz Frame synchronous mode: 24.5 - 25.5 Hz, 49 - 51 Hz	31 - 135 kHz, 24 - 61 Hz Frame synchronous mode: 24.5 - 25.5 Hz, 49 - 51 Hz	31 - 135 kHz, 24 - 61 Hz Frame synchronous mode: 24.5 - 25.5 Hz, 49 - 51 Hz
	Function	1 upstream, 2 downstream	1 upstream, 2 downstream	1 upstream, 2 downstream
	Standard	Rev. 2.0	Rev. 2.0	Rev. 2.0
Power	Power Requirements	AC 100 - 120 V, 200 - 240 V: 50 / 60 Hz	AC 100 - 120 V, 200 - 240 V: 50 / 60 Hz	AC 100 - 120 V, 200 - 240 V: 50 / 60 Hz
	Maximum Power Consumption	140 W	108 W	130 W
	Typical Power Consumption	74 W	47 W	64 W
	Power Save Mode	Less than 2 W	Less than 0.7 W	Less than 2.5 W
Sensor	Power Management	DVI DMPM	DVI DMPM, DisplayPort 1.1a	DVI DMPM, DisplayPort 1.1a
	Sensor	Backlight Sensor, Integrated Front Sensor	Backlight Sensor, Integrated Front Sensor, Presence Sensor, Ambient Light Sensor	Backlight Sensor, Integrated Front Sensor, Presence Sensor, Ambient Light Sensor
OSD Languages		English	English, French, German, Italian, Japanese, Simplified Chinese, Spanish, Swedish, Traditional Chinese	English, French, German, Italian, Japanese, Simplified Chinese, Spanish, Swedish, Traditional Chinese
Physical Specifications	Net Weight	15.3 kg	11.5 kg	10.5 kg
	Net Weight (Without Stand)	11.8 kg	8.8 kg	7.8 kg
	Hole Spacing (VESA Standard)	200 x 100 mm and 100 x 100 mm	100 x 100 mm	100 x 100 mm
Certifications & Standards *		CE (Medical Device Directive), EN60601-1, UL60601-1, CSA C22.2 No. 601-1, FCC-B, C-tick, RoHS, China RoHS, WEEE, CCC, GOST-R	CE (Medical Device Directive), EN60601-1, UL60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, Canadian ICES-003-B, C-tick, RoHS, China RoHS, WEEE, CCC, GOST-R	CE (Medical Device Directive), EN60601-1, UL60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, Canadian ICES-003-B, C-tick, RoHS, China RoHS, WEEE, CCC, GOST-R
FDA 510(k) Clearance		Yes (for Mammography and General Radiography)	Pending (for Mammography and General Radiography)	Yes (for Mammography and General Radiography)
Supplied Accessories		AC power cord, dual link signal cable (DVI-D - DVI-D) x 2, DVI-D - DisplayPort adapter x 2, USB cable, Utility Disk (user's manual)	AC power cord, dual link signal cable (DVI-D - DVI-D), signal cable (DisplayPort - DisplayPort), USB cable, Utility Disk (RadiCS LE, ScreenManager Pro for Medical, user's manual)	AC power cord, dual link signal cable (DVI-D - DVI-D), signal cable (DisplayPort - DisplayPort), USB cable, Utility Disk (RadiCS LE, ScreenManager Pro for Medical, user's manual)
Warranty		Five Years	Five Years	Five Years
Dimensions (Unit: mm)				
GX1030 :				
GX540, GX530 :				

\*Please contact the EIZO group company or distributor in your country for the latest information.



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